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McHugh

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(54) **TWO-WAY SLIDE FASTENER**
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(2013.01)

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See application file for complete search history.

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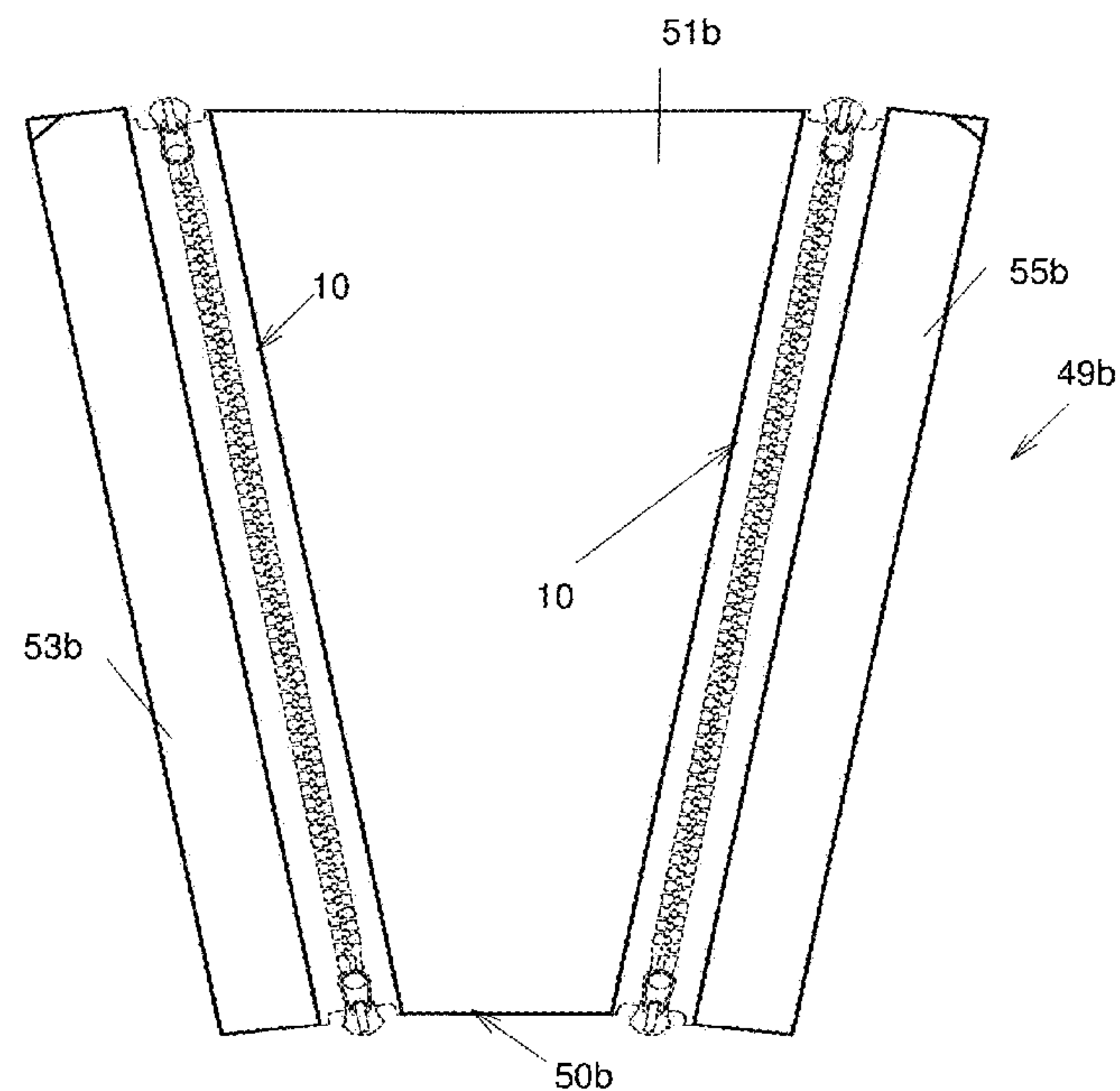
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Primary Examiner — Jason W San

(57) **ABSTRACT**
A slide fastener including two stringers and a pair of sliders
mounted to one of the stringers. When first separated from
each other, the first and second stringers can be secured to
each other using the sliders starting at either end thereof.
Also, a garment extender including the slide fastener.

16 Claims, 10 Drawing Sheets



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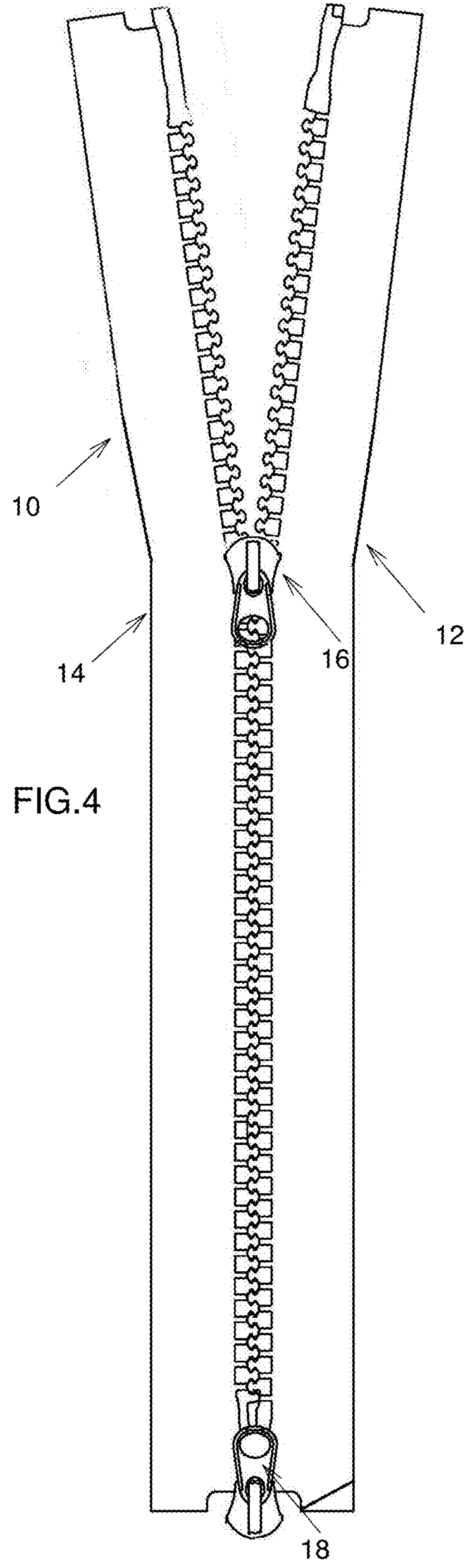
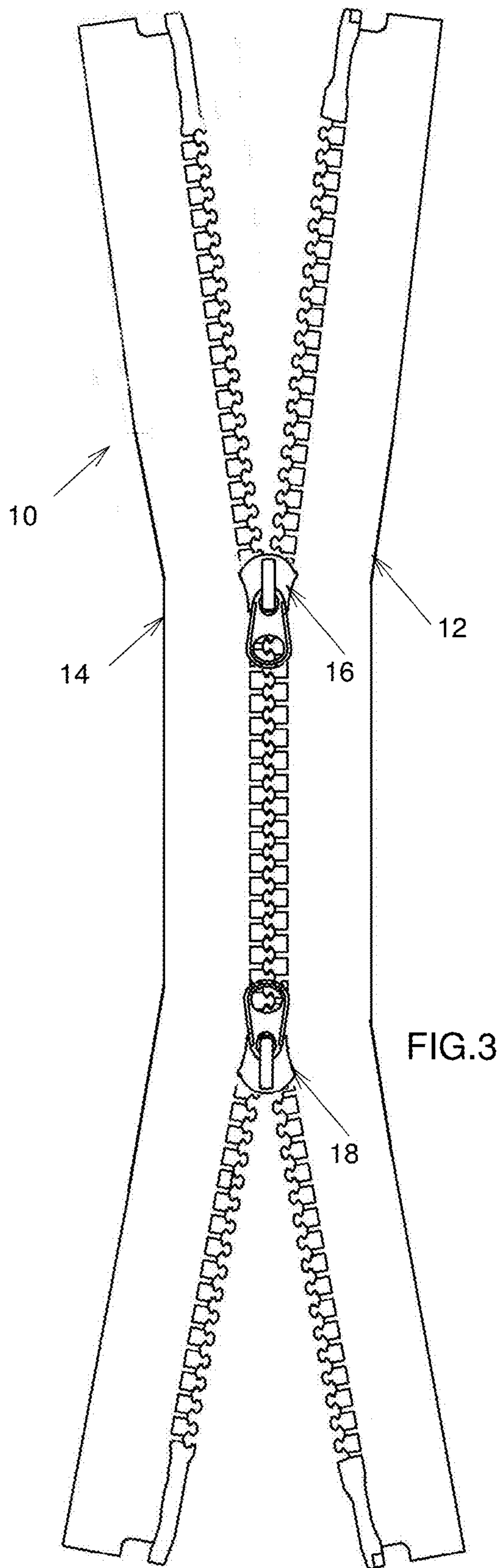


FIG. 4

FIG. 3

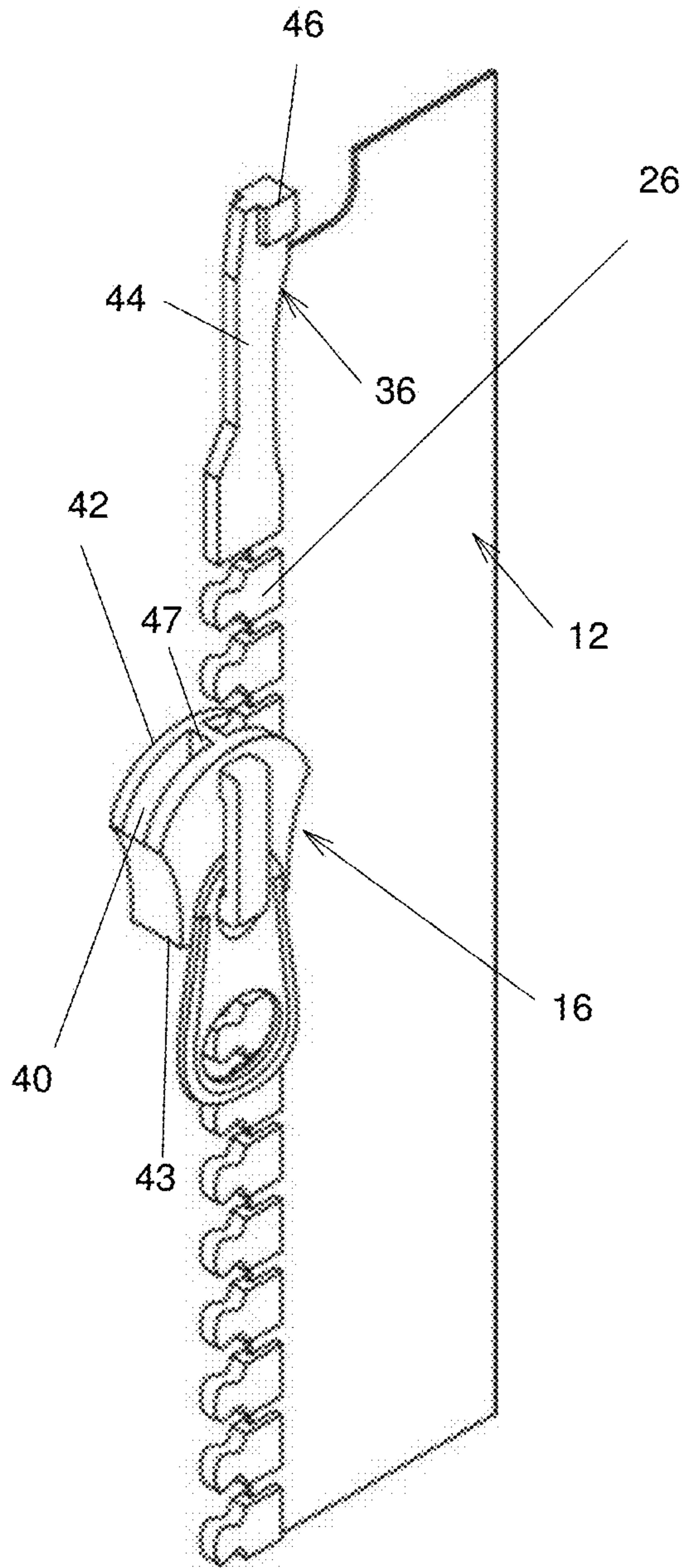


FIG. 5

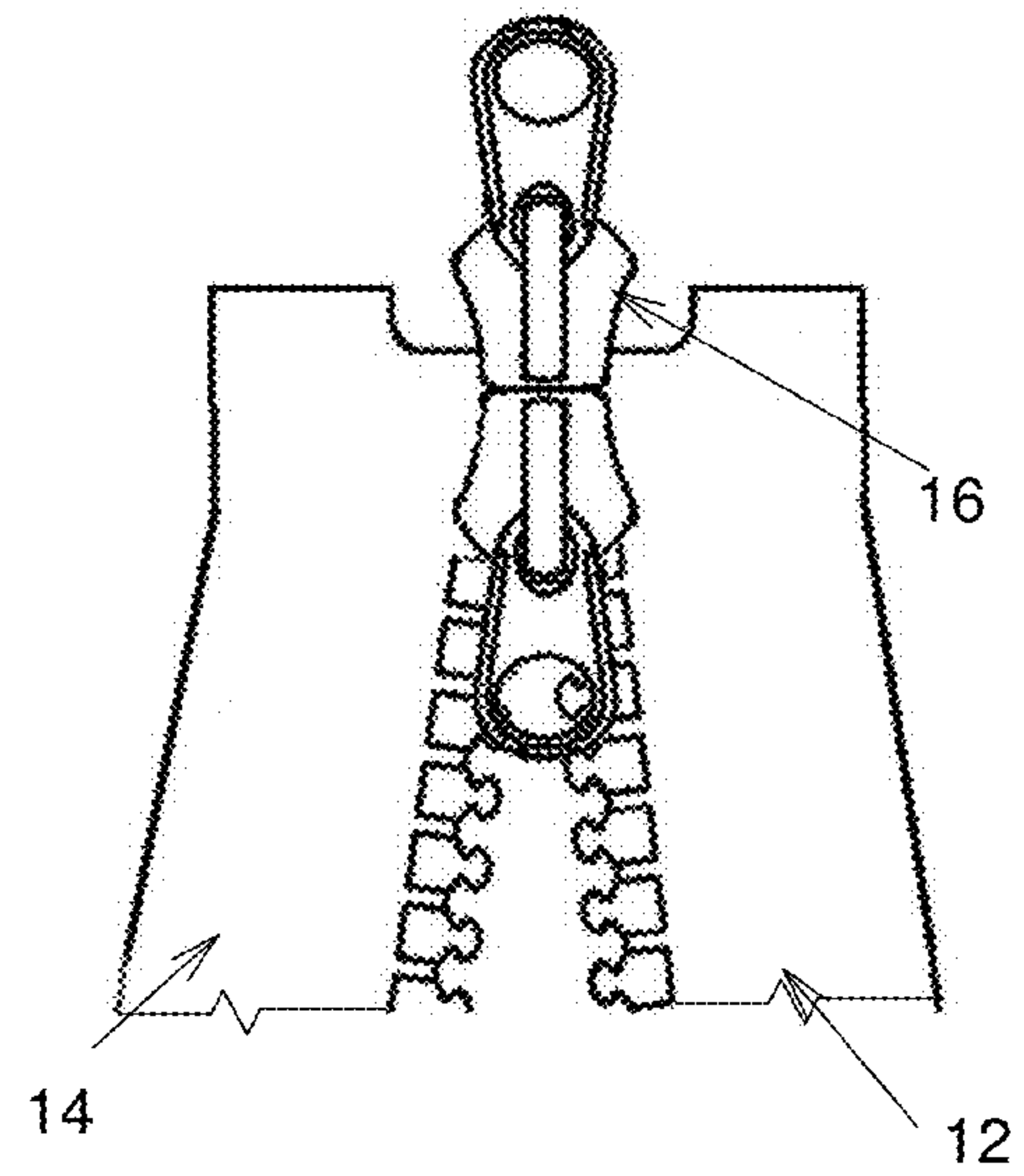


FIG. 6

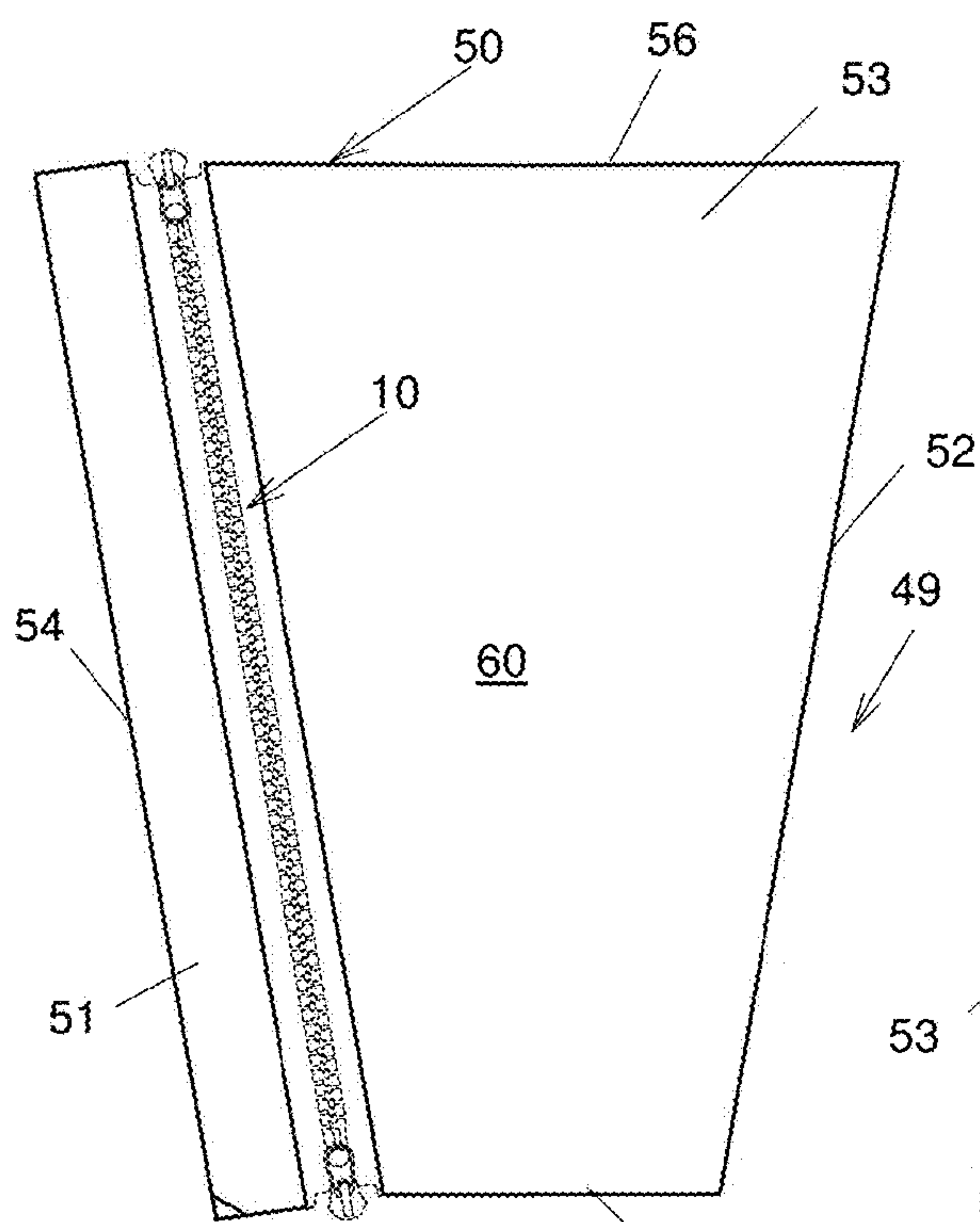


FIG. 8

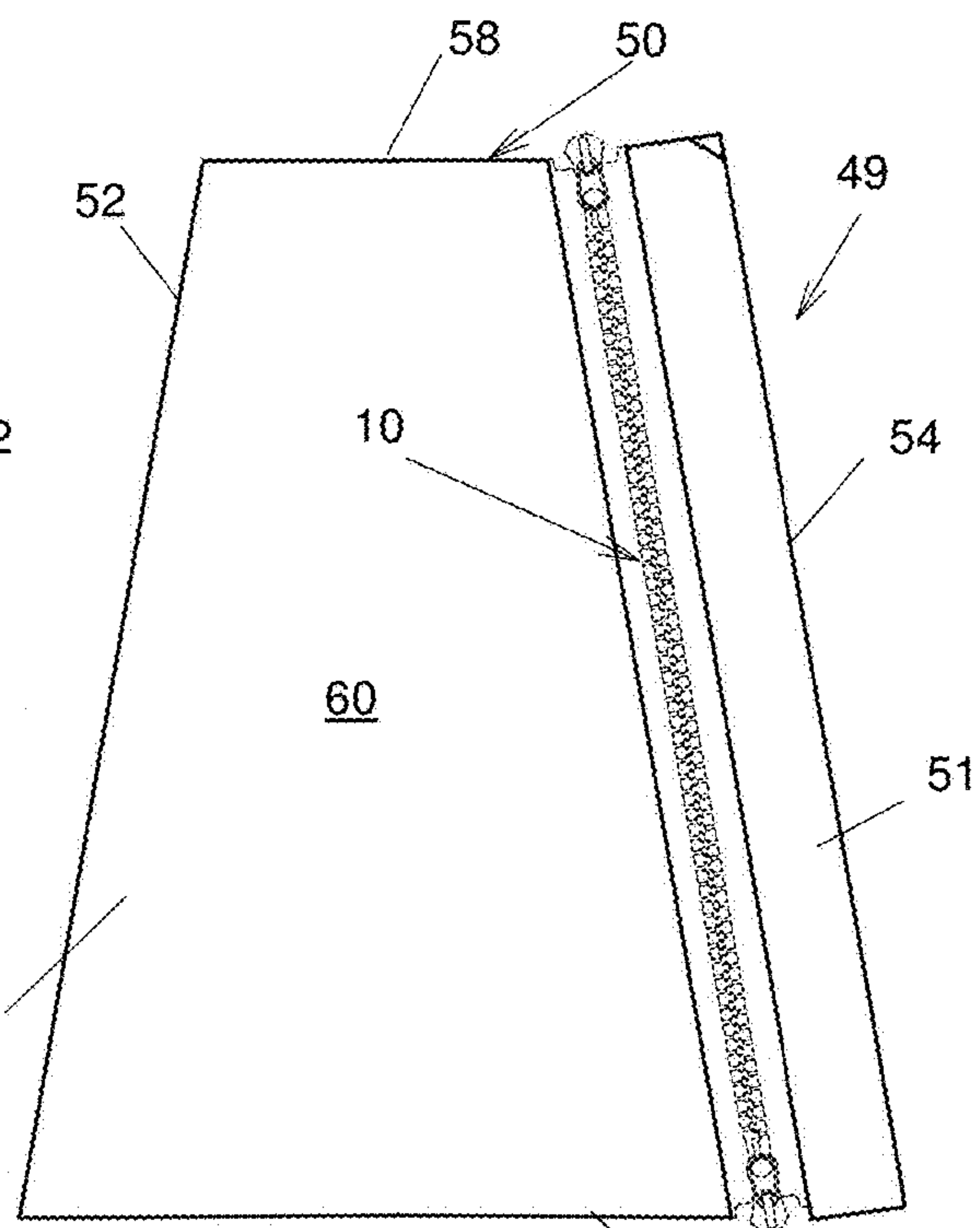


FIG. 7

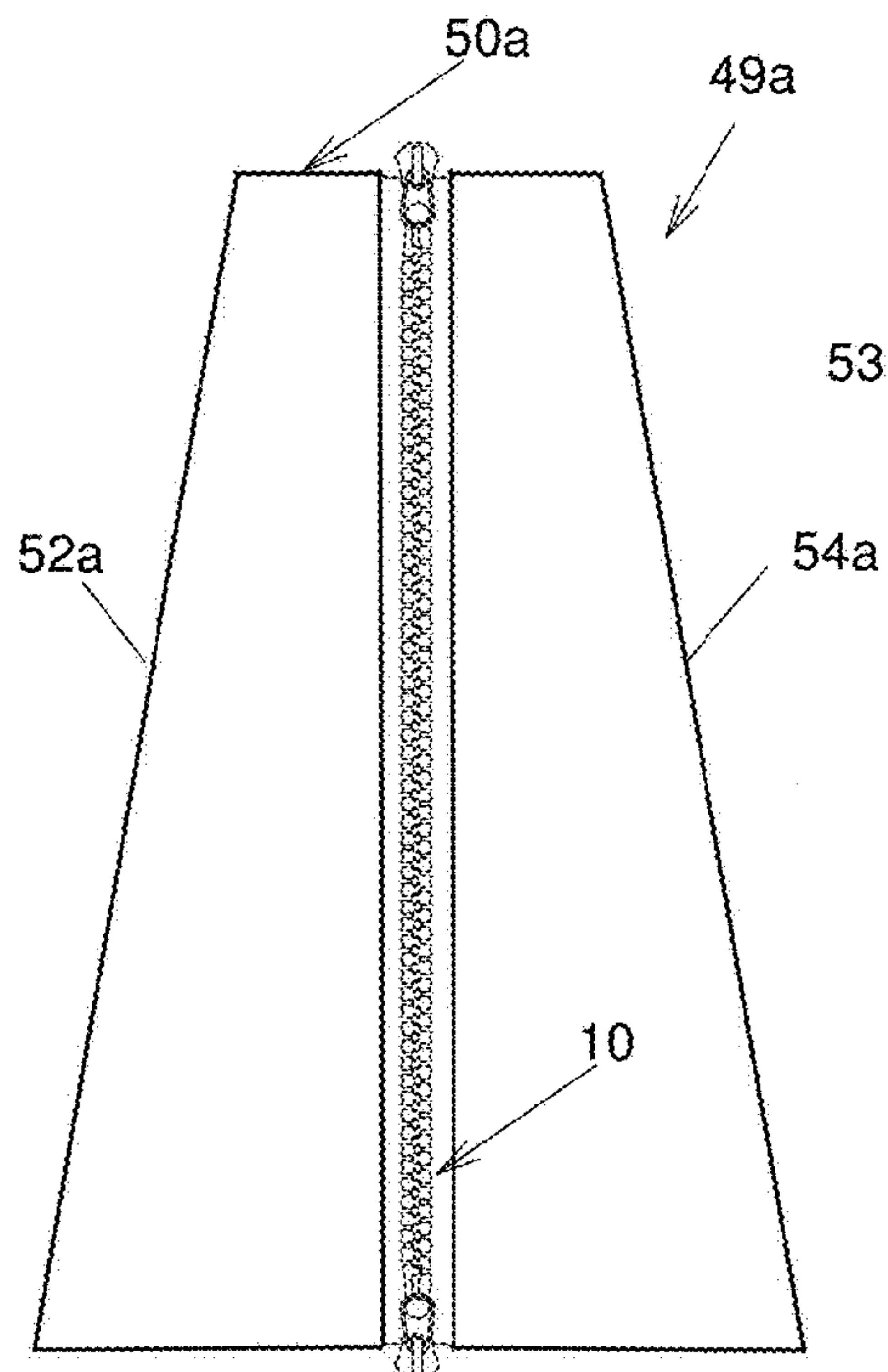


FIG. 10

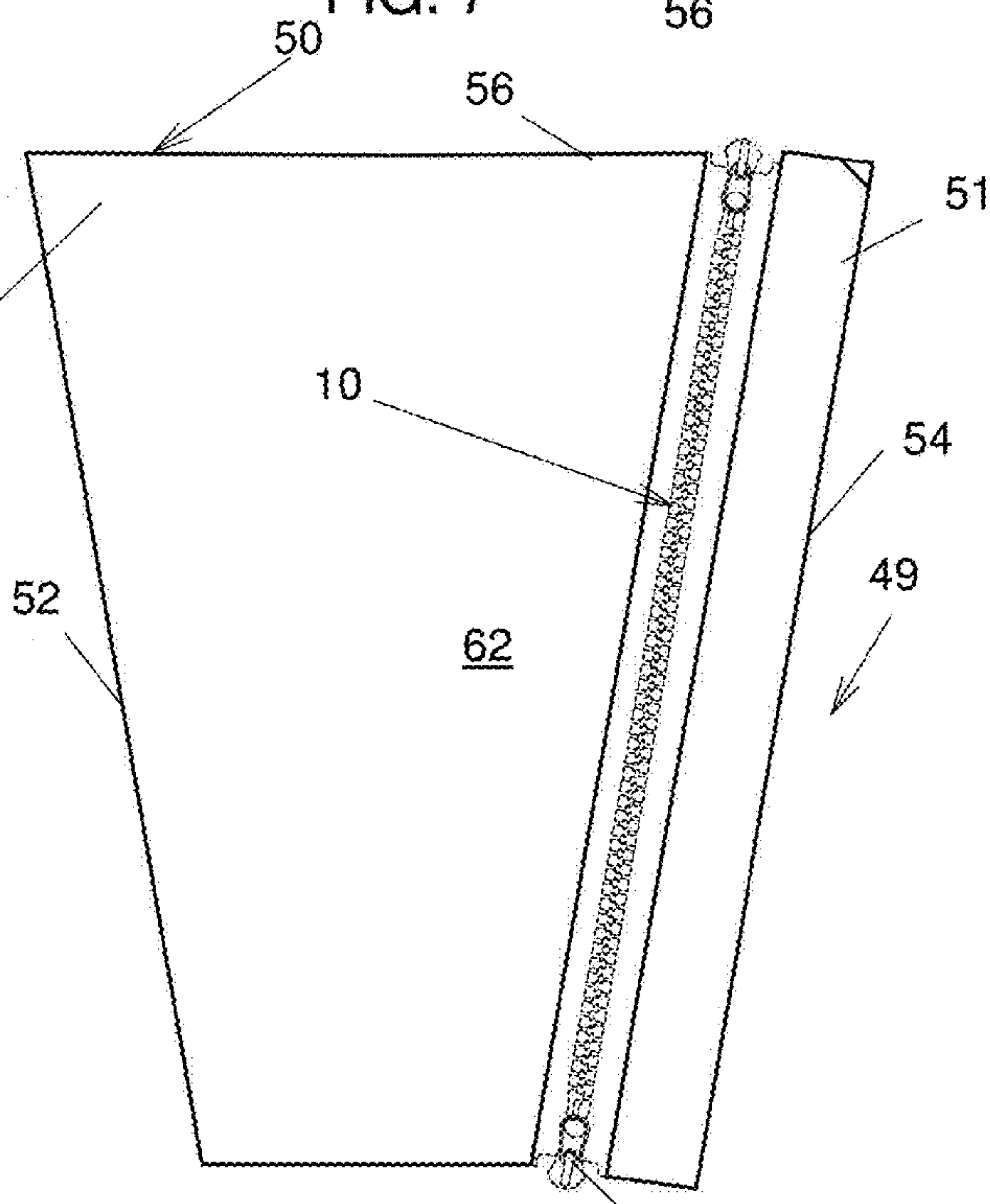
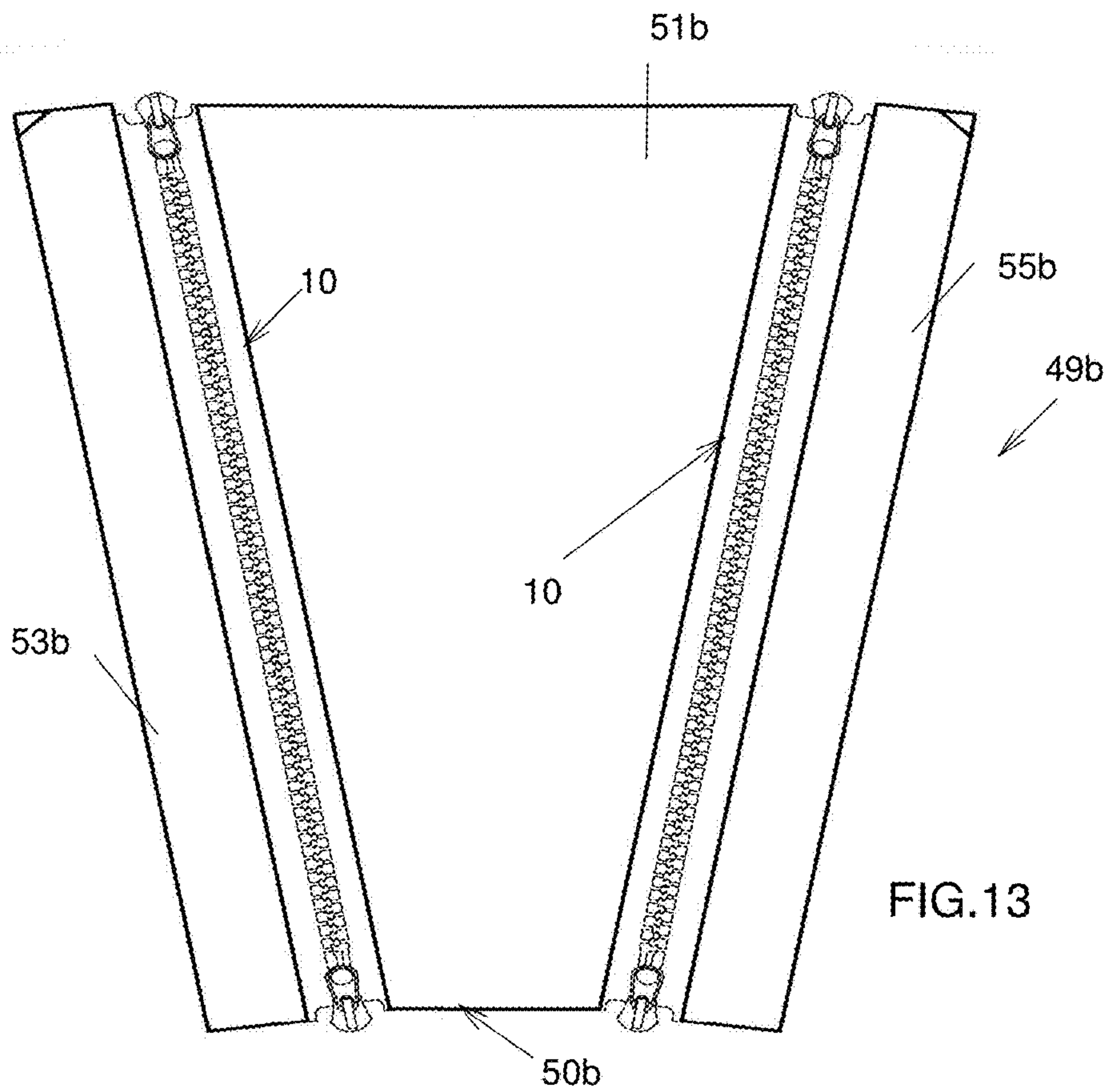
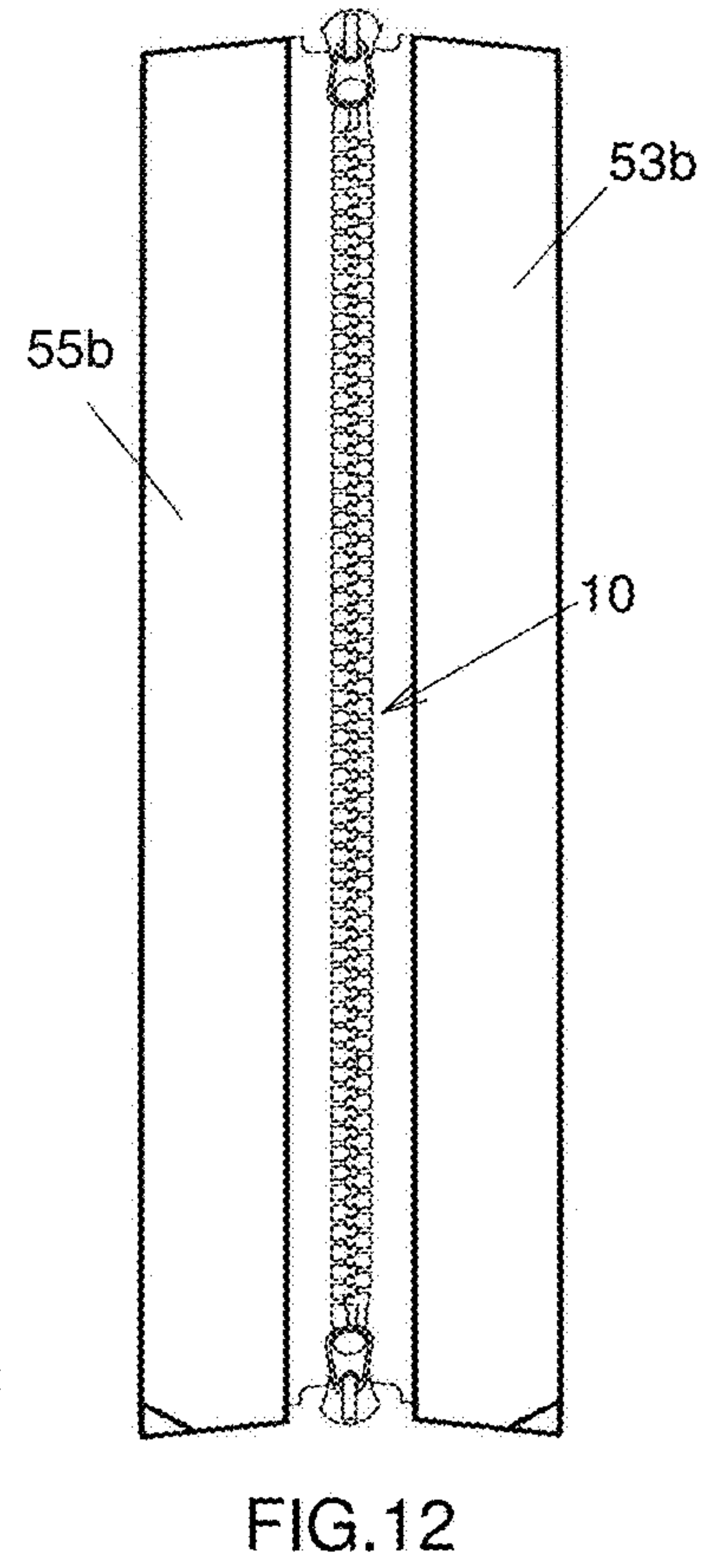
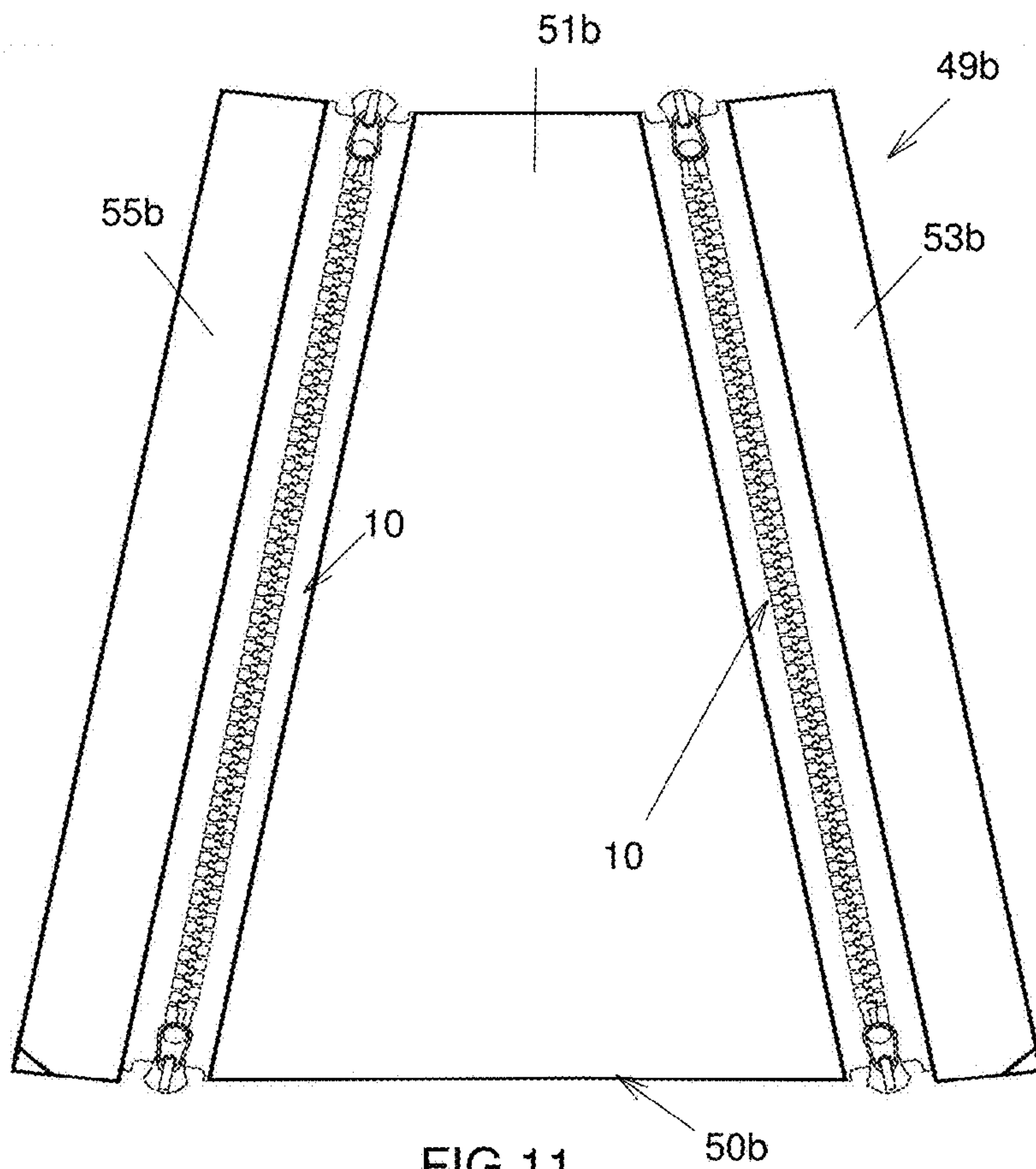
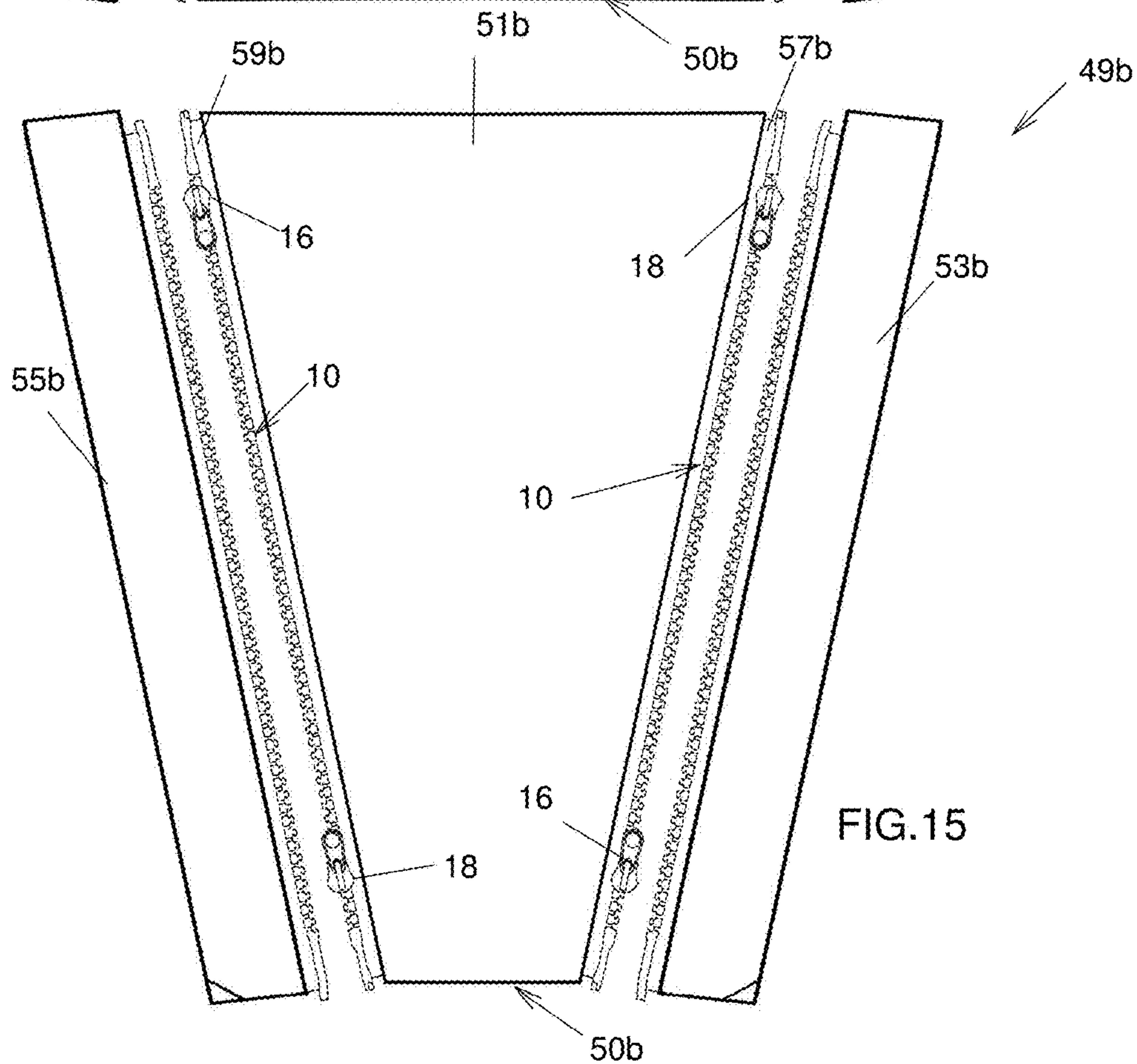
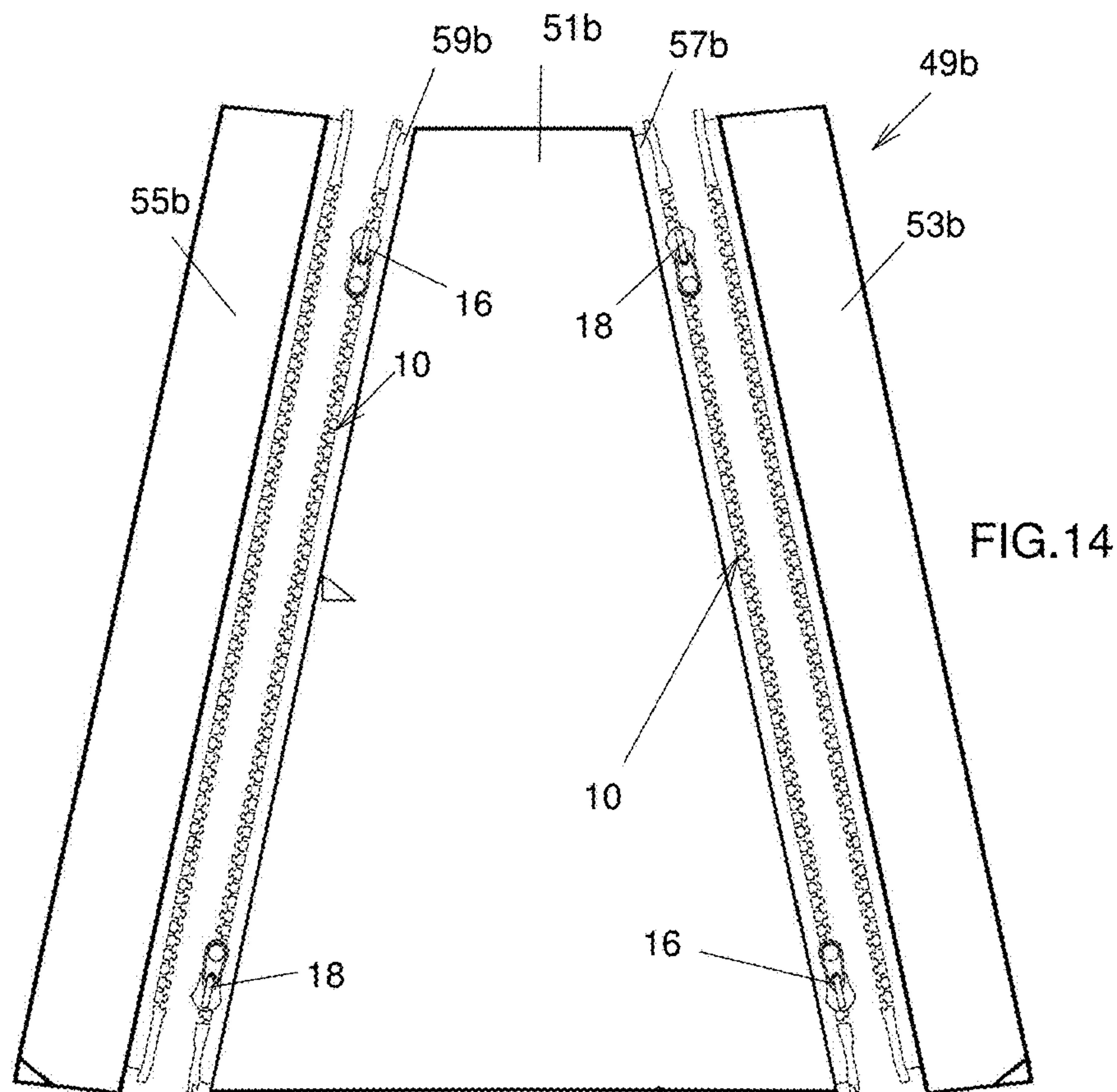
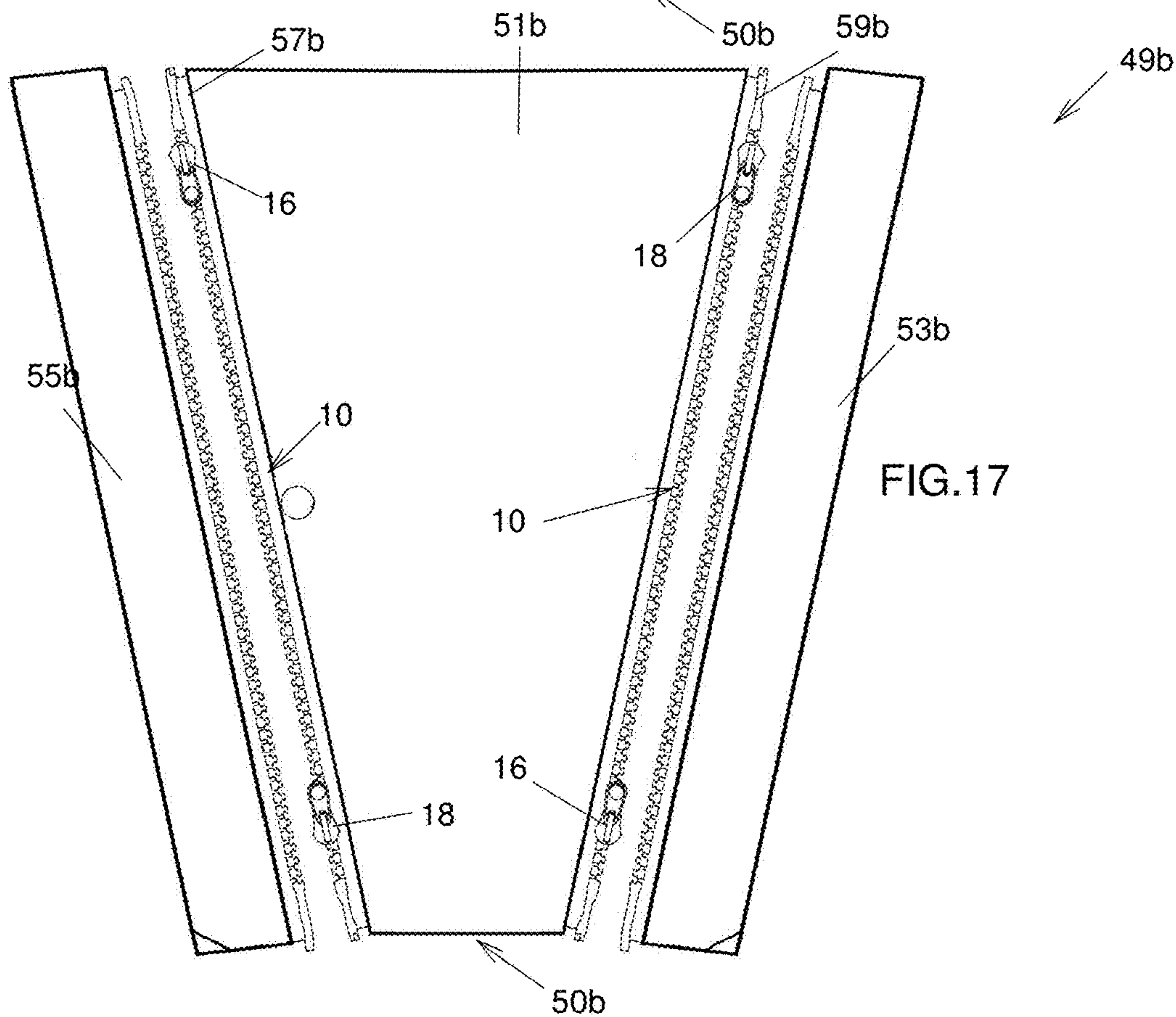
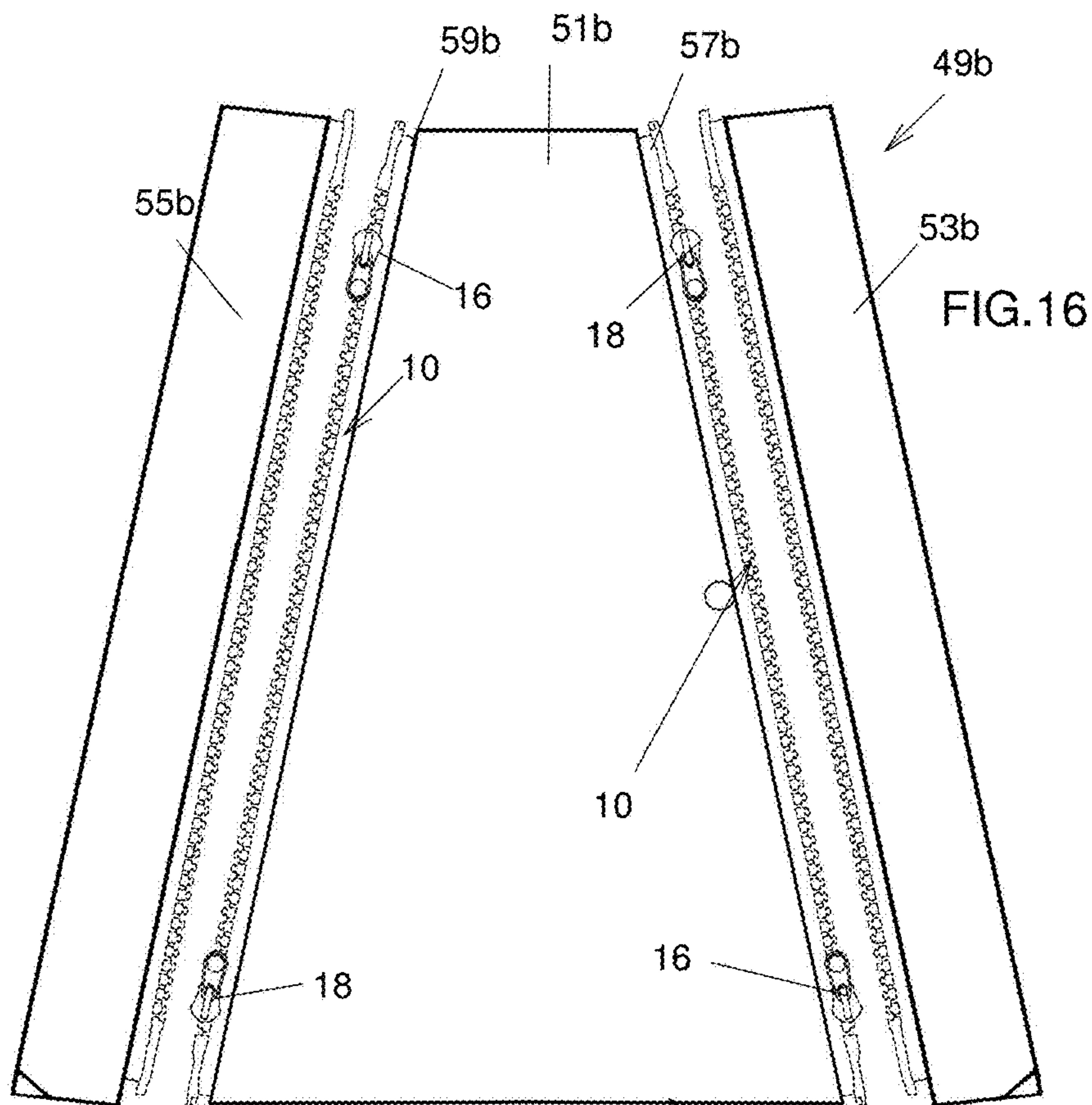
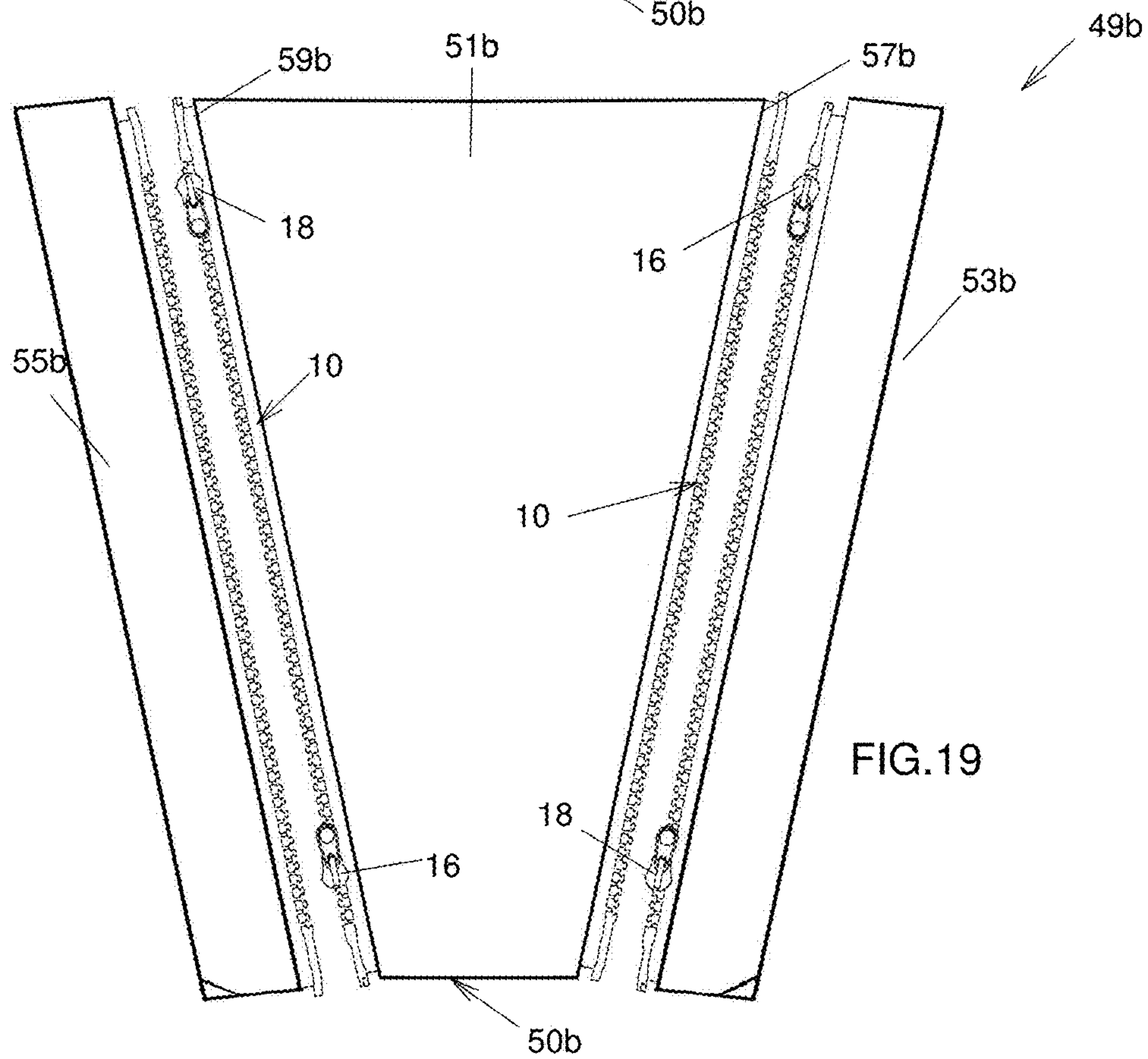
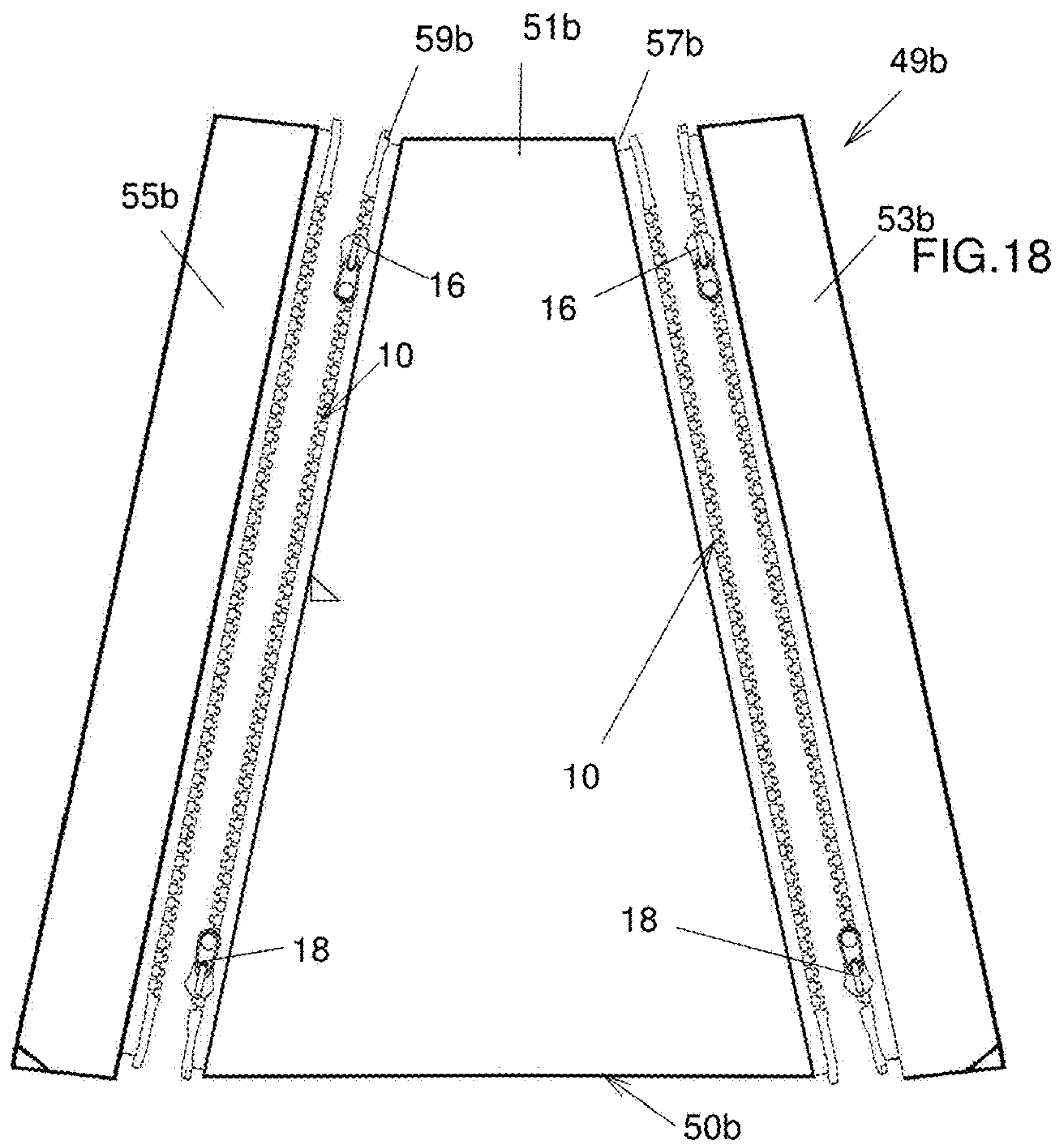


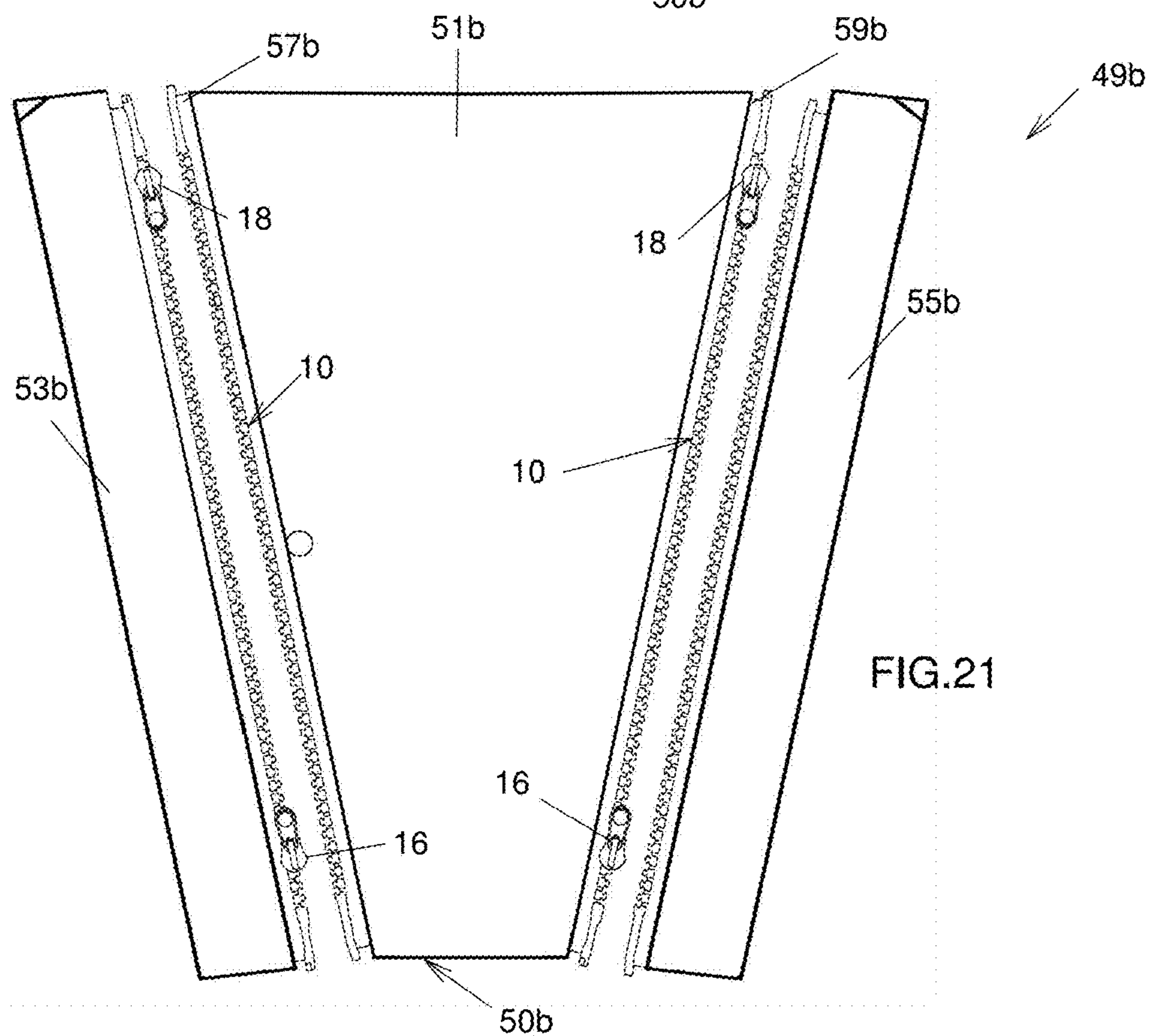
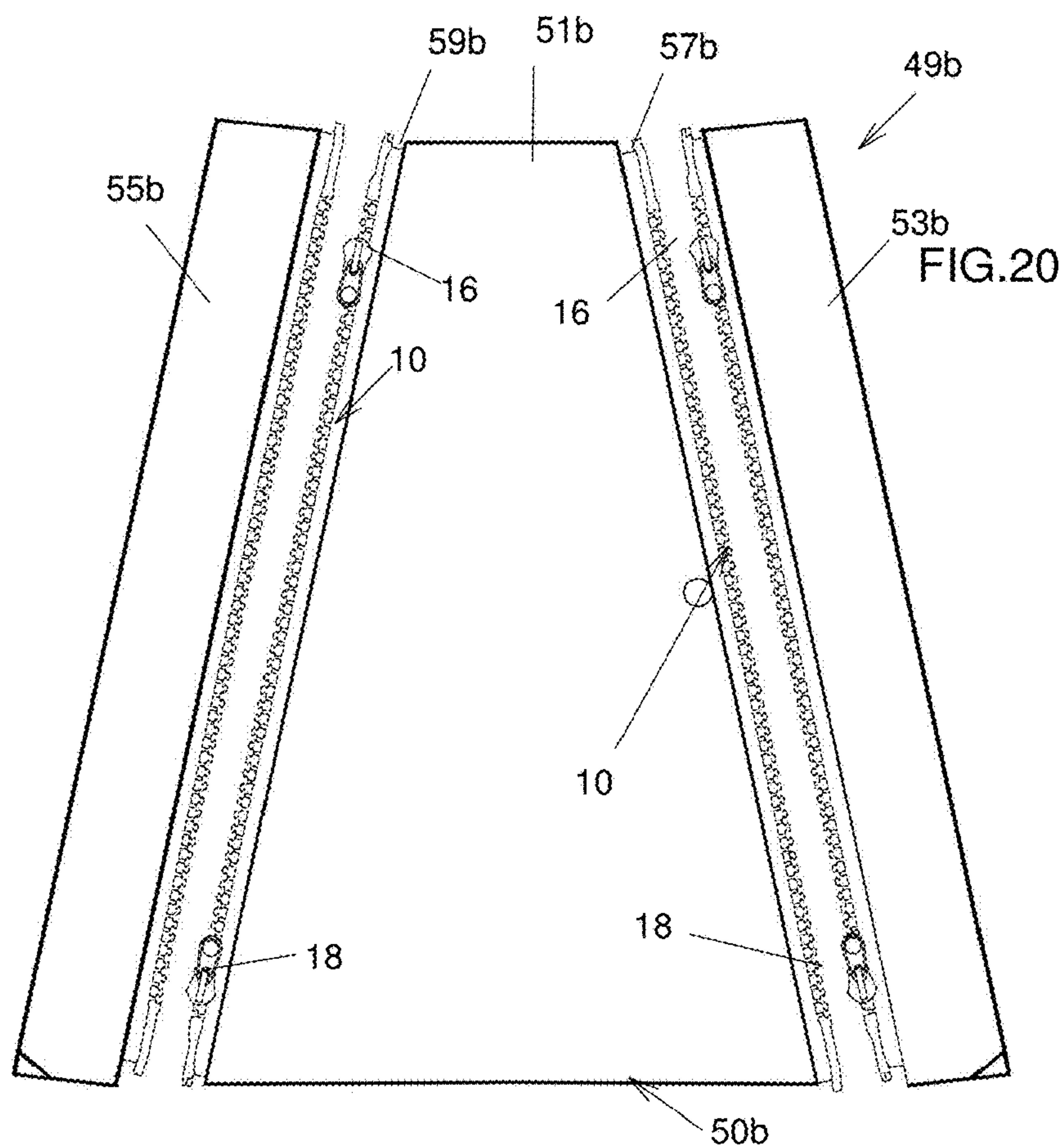
FIG. 9











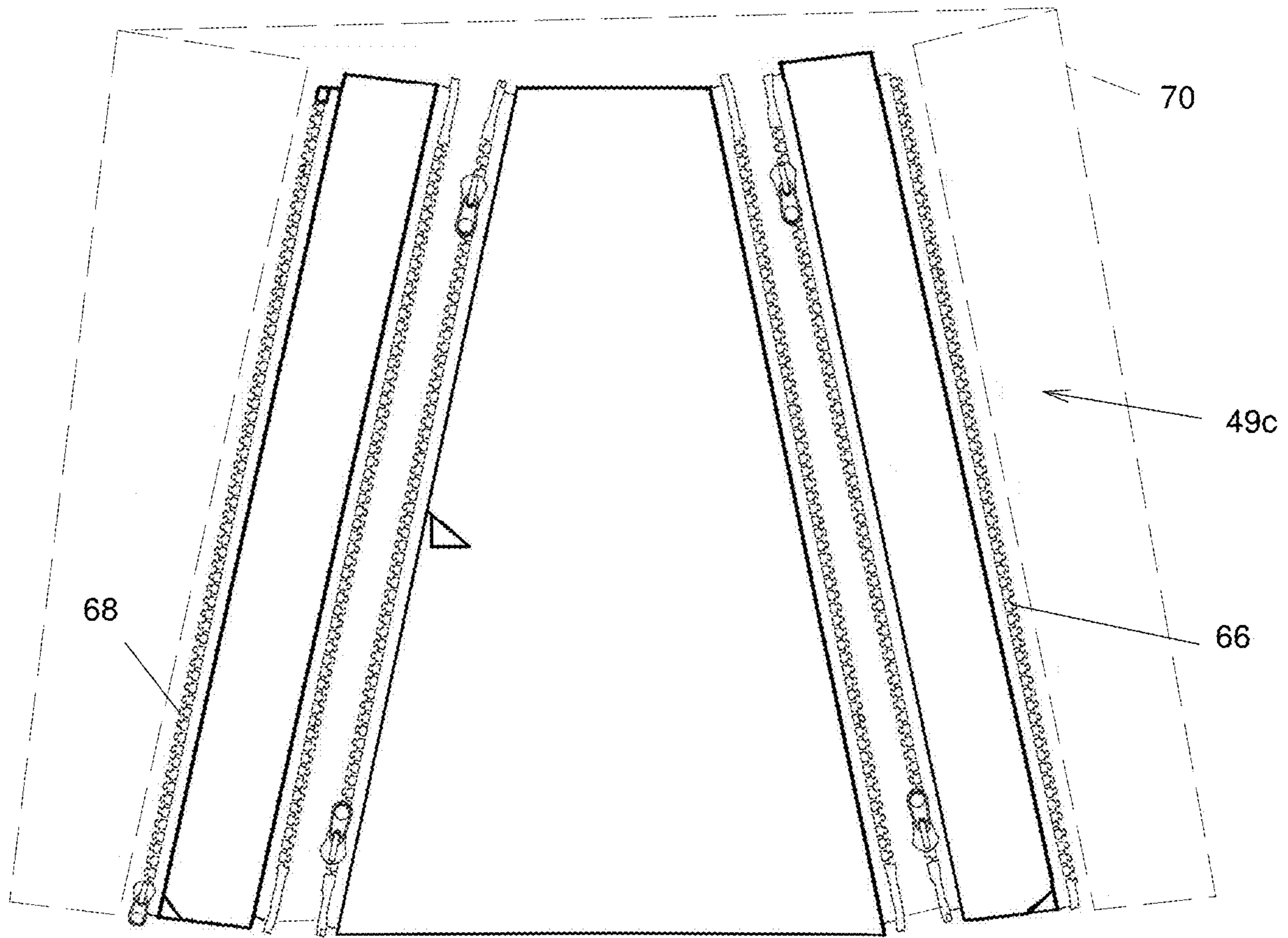


FIG.22

1**TWO-WAY SLIDE FASTENER**

FIELD OF THE INVENTION

The present invention relates to the general field of fasteners, and is more specifically concerned with a two-way slide fastener.

BACKGROUND

Some garment extenders are used, for example, to temporarily extend a garment, such as a jacket or a coat, during pregnancy. These garment extenders are attached between the two halves of an already present garment slide fastener of the garment. These garment extenders also often include their own extender slide fastener that is used to open and close the garment, with the garment extender remaining attached to the garment slide fastener.

Due the morphological changes occurring during pregnancy, such garment extenders typically have a wide portion and a narrow portion. The wide portion is located at the bottom of the garment, to accommodate the expanding belly of the pregnant woman, and the narrow portion is provided at the top of the garment. Once the baby is born, one may wish to extend the garment to accommodate the bulge created by the baby carried in a baby carrier under the garment. Since the baby is usually carried over the chest in such baby carriers, the wide portion and narrow portions would ideally switch position when the garment extender is used to extend the garment to carry the baby.

Switching the narrow and wide portions of the garment extender however results in switching the bottom and top edges of the garment extender. Since conventional slide fasteners can only be joined to each other at a single extremity after having been disengaged, if the extender slide fastener is configured to engage from the bottom during pregnancy, the same slide fastener will be switched upside/down when the garment extender is flipped for baby carrying, which will result in an unnatural top to bottom engagement of the slide fastener.

Accordingly, there exists a need for an improved slide fastener. It is a general objective of the present invention to provide such an improved slide fastener.

SUMMARY OF THE INVENTION

In a broad aspect, the invention provides a slide fastener comprising: a first stringer, the first stringer including a first tape defining first tape first and second ends, a plurality of first teeth being provided along the first tape between the first tape first and second ends; a second stringer, the second stringer including a second tape defining second tape first and second ends, a plurality of second teeth being provided along the second tape between the second tape first and second ends; first and second sliders, the first slider defining a first channel defining first channel wide and narrow ends, the second slider defining a second channel defining second channel wide and narrow ends, the first slider being operative for meshing to each other the first and second teeth when the first and second teeth move together in the first channel from the first channel wide end to the first channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together in the first channel from the first channel narrow end to the first channel wide end, the second slider being operative for meshing to each other the first and second teeth when the first and second teeth move together in the second channel

2

from the second channel wide end to the second channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together in the second channel from the second channel narrow end to the second channel wide end; the first and second sliders being mounted to the first teeth with the first and second channel narrow ends facing each other; wherein the first tape is provided with a retainer pin at each end thereof preventing the first and second sliders from sliding out of the first stringer; and wherein the second tape is provided with a separable pin at each of the tape first and second ends, the separable pins being each reversibly insertable through both the first and second channels when the first and second sliders abut against each other to attach the first and second stringers to each other or to allow detachment of the first and second stringers from each other.

Advantageously, the proposed slide fastener may be attached or detached from both ends thereof.

In another broad aspect, there is provided a garment extender including a body and a pair of opposed garment attachments for attaching the body to a garment, the body including the slide fastener as described above for allowing an intended user to open or close the garment without detaching the garment extender from the garment.

In yet another broad aspect, there is provided a slide fastener comprising: a first stringer, the first stringer including a first tape defining first tape first and second ends, a plurality of first teeth being provided along the first tape between the first tape first and second ends; a second stringer, the second stringer including a second tape defining second tape first and second ends, a plurality of second teeth being provided along the second tape between the second tape first and second ends; first and second sliders, the first slider defining a first channel defining first channel wide and narrow ends, the second slider defining a second channel defining second channel wide and narrow ends, the first slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the first channel from the first channel wide end to the first channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the first channel from the first channel narrow end to the first channel wide end, the second slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel wide end to the second channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel narrow end to the second channel wide end; the first and second sliders being mounted to the first stringer with the first and second channel narrow ends facing each other, the first and second channel wide ends facing respectively the first tape first and second ends. With the first and second stringers detached from each other, the first and second stringers are attachable to each other by inserting the second stringer in the first and second channels and then meshing together the first and second teeth using one of the first and second sliders while starting at either one of the first tape first and second ends.

There may also be provided a slide fastener wherein, with the first and second stringers attached to each other and the first and second sliders respectively at the first tape first and second ends, the first and second stringers are detachable from each other by moving both the first and second sliders

3

adjacent either one of the first tape first and second ends and then removing the second stringer from the first and second channels.

There may also be provided a slide fastener wherein, with the first and second stringers positioned adjacent each other, the first and second stringers are alternatively securable to each other in a first direction by moving the first and second sliders to the first tape first end, inserting the second stringer first in the second channel and then in the first channel, and subsequently moving the second slider towards the first tape second end; and securable to each other in a second direction by moving the first and second sliders to the first tape second end, inserting the second stringer first in the first channel and then in the second channel, and subsequently moving the first slider towards the first tape first end.

There may also be provided a slide fastener wherein the first tape is provided with a retainer pin at each end thereof preventing the first and second sliders from sliding out of the first stringer; and wherein the second tape is provided with a separable pin at each of the tape first and second ends, the separable pins being each insertable through both the first and second channels when the first and second sliders abut against each other to attach the first and second stringers to each other and removable from both the first and second channels when the first and second sliders abut against each other to detach the first and second stringers from each other.

There may also be provided a slide fastener wherein the retainer pin includes a pin body of substantially constant thickness therealong and a retainer protruding from the pin body to produce a thicker portion thicker than the remainder of the retainer pin.

There may also be provided a slide fastener wherein the retainer and separable pins have substantially identical pin lengths.

There may also be provided a slide fastener wherein the pin lengths are substantially equal to a combined length of the first and second channels.

In yet another broad aspect, there is provided a garment extender comprising: a body, the body defining opposed body first and second ends and body first and second sides extending therebetween, the body first and second sides being provided each with a respective attachment for attaching the garment extender to a garment; the body including body first and second panels and a slide fastener between the body first and second panels extending between the body first and second ends to allow selective attachment of the body first and second panels to each other and detachment of the body first and second panels from each other; the slide fastener including: a first stringer, the first stringer including a first tape secured to the body first panel and defining first tape first and second ends respectively at the body first and second ends, a plurality of first teeth being provided along the first tape between the first tape first and second ends; a second stringer, the second stringer including a second tape secured to the body second panel and defining second tape first and second ends respectively at the body first and second ends, a plurality of second teeth being provided along the second tape between the second tape first and second ends; first and second sliders, the first slider defining a first channel defining first channel wide and narrow ends, the second slider defining a second channel defining second channel wide and narrow ends, the first slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the first channel from the first channel wide end to the first channel narrow end and for separating from each other the first and second teeth when the first and second teeth move

4

together relative to the first channel from the first channel narrow end to the first channel wide end, the second slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel wide end to the second channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel narrow end to the second channel wide end; the first and second sliders being mounted to the first stringer with the first and second channel narrow ends facing each other, the first and second channel wide ends facing respectively the first tape first and second ends. With the first and second stringers detached from each other, the first and second stringers are attachable to each other by inserting the second stringer in the first and second channels and then meshing together the first and second teeth using one of the first and second sliders while starting at either one of the first tape first and second ends.

There may also be provided a garment extender wherein, with the first and second stringers attached to each other and the first and second sliders respectively at the first tape first and second ends, the first and second stringers are detachable from each other by moving both the first and second sliders adjacent either one of the first tape first and second ends and then removing the second stringer from the first and second channels.

There may also be provided a garment extender wherein, with the first and second stringers positioned adjacent each other, the first and second stringers are alternatively securable to each other in a first direction by moving the first and second sliders to the first tape first end, inserting the second stringer first in the second channel and then in the first channel, and subsequently moving the second slider towards the first tape second end; and securable to each other in a second direction by moving the first and second sliders to the first tape second end, inserting the second stringer first in the first channel and then in the second channel, and subsequently moving the first slider towards the first tape first end.

There may also be provided a garment extender wherein the first tape is provided with a retainer pin at each end thereof preventing the first and second sliders from sliding out of the first stringer; and wherein the second tape is provided with a separable pin at each of the tape first and second ends, the separable pins being each insertable through both the first and second channels when the first and second sliders abut against each other to attach the first and second stringers to each other and removable from both the first and second channels when the first and second sliders abut against each other to detach the first and second stringers from each other.

There may also be provided a garment extender wherein the body tapers in a direction leading from the body first end towards the body second end.

There may also be provided a garment extender wherein the slide fastener is a first slide fastener, the body further comprising a body third panel and a second slide fastener similar to the first slide fastener between the body second and third panels extending between the body first and second ends to allow selective attachment of the body second and third panels to each other and detachment of the body second and third panels from each other.

There may also be provided a garment extender wherein the first stringers of the first and second slide fasteners are both mounted to the second panel on opposite sides thereof

5

and wherein the second stringers of the first and second slide fasteners are mounted respectively to the body first and third panels.

There may also be provided a garment extender wherein the second stringers of the first and second slide fasteners are both mounted to the second panel on opposite sides thereof and wherein the first stringers of the first and second slide fasteners are mounted respectively to the body first and third panels.

There may also be provided a garment extender wherein the first stringers of the first and second slide fasteners are mounted respectively to the second and third panels, and wherein the second stringers of the first and second slide fasteners are mounted respectively to the body first and second panels.

There may also be provided a garment extender wherein the second panel defines opposed second panel first and second faces, the second panel first and second faces being made of different materials.

There may also be provided a garment extender wherein the second panel first and second faces are respectively waterproof and made of a soft to touch material.

Other objects, advantages and features of the present invention will become more apparent upon reading of the following non-restrictive description of preferred embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1, in a front elevation view, illustrates a slide fastener in accordance with an embodiment of the present invention, the slider fastener being here shown with both stringers thereof detached from each other;

FIG. 2, in a front elevation view, illustrates the slide fastener of FIG. 1, the slider fastener being here shown with both stringers thereof completely attached to each other;

FIG. 3, in a front elevation view, illustrates the slide fastener of FIG. 1, the slider fastener being here shown with both stringers thereof partially attached to each other, in a portion away from both ends of the slide fastener;

FIG. 4, in a front elevation view, illustrates the slide fastener of FIG. 1, the slider fastener being here shown with both stringers thereof partially attached to each other, in a bottom portion thereof;

FIG. 5, in a perspective view, illustrates a slider adjacent a retainer pin all part of the slide fastener of FIG. 1;

FIG. 6, in a partial front elevation view, illustrates the slide fastener of FIG. 1, the slider fastener being here shown with both stringers thereof attached to each other only at the top end thereof;

FIG. 7, in a front elevation view, illustrates a garment extender in accordance with an embodiment of the invention incorporating the slide fastener of FIG. 1;

FIG. 8, in a front elevation view, illustrates the garment extender of FIG. 7 rotated 180 degrees about an axis perpendicular to the drawing sheets, so that the top and bottom ends of the garment extender have switched places;

FIG. 9, in a front elevation view, illustrates the garment extender of FIG. 7 with the left part of the body thereof flipped 180 degrees about an axis parallel to the drawing sheets, so that the top and bottom ends of this part of the body have switched places;

FIG. 10, in a front elevation view, illustrates a garment extender in accordance with another embodiment of the invention incorporating the slide fastener of FIG. 1;

6

FIG. 11, in a front elevation view, illustrates a garment extender in accordance with yet another embodiment of the invention incorporating two slide fasteners of FIG. 1;

FIG. 12, in a front elevation view, illustrates the garment extender of FIG. 11 with a central portion thereof between the two slide fasteners omitted and the two slide fasteners having their remaining halves secured to each other;

FIG. 13, in a front elevation view, illustrates the garment extender of FIG. 11 rotated 180 degrees about an axis perpendicular to the drawing sheets, so that the top and bottom ends of the garment extender have switched places;

FIGS. 14 and 15 together illustrate flipping of the body central portion of a first configuration of the garment extender of FIG. 11;

FIGS. 16 and 17 together illustrate rotation of the body central portion of the first configuration of the garment extender of FIG. 11;

FIGS. 18 and 19 together illustrate flipping of the body central portion of of a second configuration of the garment extender of FIG. 11;

FIGS. 20 and 21 together illustrate rotation of the whole garment extender of FIG. 11 in the second configuration;

FIG. 22, in a front elevation view, illustrates a garment extender in accordance with yet another embodiment of the invention.

DETAILED DESCRIPTION

The term “substantially” is used throughout this document to indicate variations in the thus qualified terms. These variations are variations that do not materially affect the manner in which the invention works and can be due, for example, to uncertainty in manufacturing processes or to small deviations from a nominal value that do not cause significant changes to the invention. These variations are to be interpreted from the point of view of the person skilled in the art. Also, directional terminology such as front, top and side, refer to a person standing up and wearing the proposed garment extender attached to a garment, such as a coat and or a jacket. This terminology is used for convenience purpose and should not be interpreted to restrict the scope of the invention.

Referring for example to FIG. 1, there is shown a slide fastener 10 in accordance with an embodiment of the present invention. The slide fastener 10 is similar in many respects to slide fasteners known as zippers. The slide fastener 10 includes first and second stringers 12 and 14 and first and second sliders 16 and 18. The first and second sliders 16 and 18 are mounted to the first stringer 12, typically permanently. When the first and second sliders 16 and 18 are moved to any one of the ends of the first stringer 12, the second stringer can be engaged with the first and second sliders 16 and 18 to secure the first and second stringers 12 and 14 to each other. This is in opposition to conventional two-way slide fasteners which include stringers that can only be secured to each other when the sliders are at a specific one of the two ends of the fastener. To that effect, the first stringer is devoid of a retainer block that is commonly used in slide fasteners, and instead typically show a complete mirror symmetry along its length.

More specifically, the first stringer 12 includes a first tape 20 defining first tape first and second ends 22 and 24, a plurality of first teeth 26 being provided along the first tape 20 between the first tape first and second ends 22 and 24. Similarly, the second stringer 14 includes a second tape 28 defining second tape first and second ends 30 and 32, a

plurality of second teeth **34** being provided along the second tape **28** between the second tape first and second ends **30** and **32**.

In the embodiment shown in the drawings, the first and second sliders **16** and **18** are mounted permanently to the first stringer **12**. To prevent the first and second sliders **16** and **18** from becoming detached from the first stringer **12**, the first tape **20** is provided with a retainer pin **36** at each of the first tape first and second ends **22** and **24**. The second stringer **14** is provided with a separable pin **38** at each of the second tape second tape first and second ends **30** and **32**. The retainer and separable pins **36** and **38** typically have substantially identical lengths, which is typically about the combined length of the channels **40** (seen in FIG. 5) of the first and second sliders **16** and **18**.

The first and second teeth **26** and **34** and the first and second sliders **16** and **18** may be conventional teeth and sliders used commonly in the art of slide fasteners. Typically, the first and second sliders **16** and **18** are similar to each other. Referring to FIG. 5, in which only the first slider **16** is seen, the first and second sliders **16** and **18** each define a Y-shaped channel **40** defining substantially opposed channel wide and narrow ends **42** and **43**. The channel **40** is typically split by a member **47** extending thereacross along a relatively small part thereof at the channel wide end **42** to define the Y shape of the channel **40**, but similar channels devoid of the member **47** are usable in alternative embodiments. As in a conventional slide fastener, each of the first and second sliders **16** and **18** is operative for meshing to each other the first and second teeth **26** and **34** when the first and second teeth **26** and **34** move relative to the channel **40** from the channel wide end **42** to the channel narrow end **43** and for separating from each other the first and second teeth **26** and **34** when the first and second teeth **26** and **34** move together relative the channel **40** from the channel narrow end **43** to the channel wide end **42**. Typically, it is the first and second sliders **16** and **18** that are moved relative to an intended user to create this relative movement. The first and second sliders **16** and **18** are mounted to the first tape **20**, and more specifically to the first teeth **26** with their channel narrow ends **43** facing each other. While conventional teeth and sliders are usable in the slide fastener **10**, any other suitable teeth and slide fastener having the right functionality could also be used.

The separable pins **38** are similar to conventional separable pins and are made of a substantially rigid elongated piece of material that extends in prolongation of the second teeth **34** and that is small enough to relatively easily enter the channels **40** of the first and second sliders **16** and **18**. The separable pins **38** are each reversibly insertable through both channels **40** of the first and second sliders **16** and **18** when the first and second sliders **16** and **18** abut against each other to attach the first and second stringers **12** and **14** to each other or to allow detachment of the first and second stringers **12** and **14** from each other. Typically, the separable pins **38** are substantially elongated and have a constant thickness therealong, thickness referring to measurements in a direction perpendicular to the second tape **32**.

The retainer pins **36** each include a retainer pin body **44** similar in shape and dimensions to the separable pin **38**, and typically of a constant thickness therealong, but are also provided with a retainer **46** protruding from the retainer pin body **44**, for example perpendicularly to the plane in which the channel **40** is formed, which therefore creates a thicker portion in the retainer pin **36** that is thicker than the remainder of the retainer pin **36**. The retainer **46** and the channel **40** are configured and sized so that the retainer **46**

is unable to travel through the whole channel **40**, which prevents the first and second sliders **16** and **18** from detaching from the first stringer **12**. In some embodiments, the retainer **46** protrudes from the retainer pin body **44** to an extent preventing the retainer **46** from entering the channel **40**, and therefore maintains the first and second sliders **16** and **18** on the first stringer **12**. In other embodiments, the retainer **46** may enter the channel **40**, but a ledge (not shown in the drawings) protruding inside the channel **40** prevents the retainer **46** from travelling through the whole channel **40**. The ledge is also configured and sized to allow movements relative to the first stringer **12** when the retainer **46** is away from the ledge. The retainer pin body **44** and the separable pin **38** are sized to fit both simultaneously and jointly in the channel **40**, typically substantially snugly and adjacent to each other at the channel narrow end **43**.

When initially detached from each other, the first and second stringers **12** and **14** are attachable to each other by inserting the second stringer **14** in the channels **40** of the first and second sliders **16** and **18** (as seen in FIG. 6, the channel **40** not being visible in FIG. 6) and then meshing together the first and second teeth **26** and **34** using one of the first and second sliders **16** or **18** while starting at either one of the first tape first and second ends **22** or **24**. In other words, if a garment or other clothing is worn vertically, an intended user can attach and close the slide fastener **10** from either one of its end. More specifically, to attach the first and second stringers **12** and **14** to each other, one simply moves the first and second sliders **16** and **18** so that the first and second sliders **16** and **18** abut against one another and one of the first and second sliders **16** or **18** abuts against one of the retainers **46**, at either the first **22** or **24**, with the retainer **46** either abutting against the first or second slider **16** or **18**, or with the retainer **46** abutting against a ledge located in the channel **40**. Then, the corresponding separable pin **38** is approached towards the channel wide end **42** of the one from the first and second sliders **16** and **18** that is further from the retainer **46** and inserted through both channels **40** of the first and second sliders **16** and **18**. Afterwards, the first and second sliders **16** and **18** can be moved independently from each other along the thus joined first and second stringers **12** and **14** to fully join the first and second stringers **12** and **14** to each other along their whole length, as seen in FIG. 2, or to allow the first and second stringers **12** and **14** to separate from each other at one of both of their respective ends, as seen in FIGS. 3 and 4. Complete detachment of the first and second stringers **12** and **14** from each other proceeds by simply moving both the first and second sliders **16** and **18** as much as is allowed by the retainers **46** to either the first tape first or second end **22** or **24**, and removing the separable pin **38** from the channel **40**.

FIG. 7 illustrates a body **50** of a garment extender **49** that uses the slide fastener **10**. The garment extender **49** usually includes the body **50** and attachments (not seen in FIG. 7) usable to attach the body **50** to a garment **70** (illustrated schematically only in FIG. 22), such as a jacket or a coat. The attachments are provided at the body first and second sides **52** and **54** and may for example include slide fasteners matching the slide fastener of the garment or clips, among other possibilities. The body **50** also defines body first and second ends **56** and **58**. The body includes body first and second panels **51** and **53**. The slide fastener **10** is provided in the body **50** between the body first and second panels **51** and **53** and between the body first and second ends **56** and **58** and allows to detach the body first and second panels **51** and **53** from each other. The slide fastener **10** may for example split the body **50** asymmetrically, such that the

body **50** is separated into two panels of different width when the slide fastener **10** is detached. However, as seen in FIG. **10**, the slide fastener **10** may also be provided in an alternative body **50a** midway between the body first and second sides **52a** and **54a**. Also, the body **50b** may incorporate more than one slide fastener **10**, as seen in the garment extender **49b** of FIGS. **11** and **13**. In this latter case, when a central panel **51b** of the body **50b**, that is the portion located between the two slide fasteners **10**, is removed, the remaining side panels **53b** and **55b** of the body **50b** may be used in some embodiments to form a narrower extender, as seen in FIG. **12**, as the two remaining halves of the slide fasteners **10** may form themselves a slide fastener **10**.

The body **50** is wider at the body first end **56** than at the body second end **58**, and therefore tapers in a direction leading from the body first end **56** towards the body second end **58**. The body **50** typically tapers uniformly between the body first and second ends **56** and **58**, forming a trapezoid. The body **50** defines opposed body first and second surfaces **60** and **62**, seen respectively in FIGS. **7** and **9** for example. The body **50** may be rotated 180 degrees, as seen in FIG. **8**, or have one if its halves flipped front to back, as seen in FIG. **9**, to switch the positions of the body first and second ends **56** and **58**. If the body first and second surfaces **60** and **62** have different properties, for example with the body first surface **60** weather proof and the body second surface **62** made of a soft material, rotation as in FIG. **8** may be preferable. If the body first and second surfaces have similar properties, flipping, as in FIG. **9**, or rotation, as in FIG. **8**, may be used to wear the garment extender **49** with the body first and second ends switching position. Due to the completely symmetrical nature of the slider fastener **10** in the direction leading between the body first and second ends **56** and **58**, the slide fastener **10** may be attached or detached at the end thereof that is at the bottom when the garment to which the body **50** is attached is worn, irrespective of which one of the body first and second ends **56** and **58** is at the bottom.

Referring for example to FIG. **14**, the central portion **51b** defines laterally opposed central portions sides **57b** and **59b**. The central portion **51b** is joined to opposed lateral portions **53b** and **55b** of the body **50b** at the central portion sides **57b** and **59b** through the slide fasteners **10**.

The garment extender **49b** may have two different general configurations. In the first configuration the central portion **51b** may include the first and second sliders **16** and **18** at both central portion sides **57b** and **59b** (as seen for example in FIG. **14**), or omit the first and second sliders **16** and **18** at both central portion sides **57b** and **59b** (not shown in the drawings). The first and second sliders **16** and **18** are then either omitted on the lateral portions **53b** and **55b** or present on both the lateral portions **53b** and **55b** to form complete slide fasteners **10**. In this configuration, the slide fastener **10** halves located at opposed central portion sides **57b** and **59b** are identical to each other. The central portion **51b** may be rotated without flipping front to back (as seen by comparing FIGS. **16** and **17**) or flipped front to back (as seen by comparing FIGS. **14** and **15**) to exchange the bottom and top ends of the central portion **51b** with each other without removing the lateral portions **53b** and **55b** from the garment.

In the second configuration, seen in FIGS. **18** to **21**, the central portion **51b** includes the first and second sliders **16** and **18** on one of the central portion sides **57b** or **59b** and omits the first and second sliders **16** and **18** on the other one of the central portion sides **57b** or **59b**. The first and second sliders **16** and **18** are present on the lateral portion **53b** or **55b** facing the central portion side **57b** or **59b** on which the first

and second sliders are omitted, and are omitted on the other one of the lateral portion **53b** or **55b**. In this configuration, the central portion **51b** may be removed to achieve the configuration of FIG. **12**. In this configuration, exchanging the top and bottom ends of the central portion may be performed by flipping back to front the central portion **51b** without detaching the lateral portions **53b** and **55b** from the garment, as seen in FIGS. **18** and **19**, but rotation cannot occur without such a detachment and requires rotating the whole garment extender **49b**, as seen in FIGS. **20** and **21**.

As seen in FIG. **22**, in some embodiments, a garment extender **49c**, similar to the garment extender **49b**, includes attachments **66** and **68** at the extreme lateral sides thereof in the form of slide fastener halves configured to attach to the already present slide fastener of the garment to which the garment extender **49c** is attached. Such attachments **66** and **68** are also usable in the garment extenders **49**, **49a** and **49b**. In alternative embodiments not shown in the drawings these attachments **66** and **68** include instead clips mountable to the stringers or other portions of the garment **70**.

Although the present invention has been described hereinabove by way of exemplary embodiments thereof, it will be readily appreciated that many modifications are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of this invention. Accordingly, the scope of the claims should not be limited by the exemplary embodiments, but should be given the broadest interpretation consistent with the description as a whole.

What is claimed is:

1. A garment extender comprising:

a body, the body defining opposed body first and second ends and body first and second sides extending therebetween, the body first and second sides being provided each with a respective attachment for attaching the garment extender to a garment;

the body including body first, second and third panels, the body second panel being provided between the body first and third panels, and a first slide fastener between the body first and second panels, the first slide fastener extending between the body first and second ends to allow selective attachment of the body first and second panels to each other and detachment of the body first and second panels from each other;

the first slide fastener including:

a first stringer, the first stringer including a first tape secured to a first one of the body first and second panels and defining first tape first and second ends respectively at the body first and second ends, a plurality of first teeth being provided along the first tape between the first tape first and second ends;

a second stringer, the second stringer including a second tape secured to a second one of the body first and second panels and defining second tape first and second ends respectively at the body first and second ends, a plurality of second teeth being provided along the second tape between the second tape first and second ends;

first and second sliders, the first slider defining a first channel defining first channel wide and narrow ends, the second slider defining a second channel defining second channel wide and narrow ends, the first slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the first channel from the first channel wide end to the first channel narrow end and for separating from each other the first and

11

second teeth when the first and second teeth move together relative to the first channel from the first channel narrow end to the first channel wide end, the second slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel wide end to the second channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel narrow end to the second channel wide end;

the first and second sliders being mounted to the first stringer with the first and second channel narrow ends facing each other, the first and second channel wide ends facing respectively the first tape first and second ends;

wherein, with the first and second stringers detached from each other, the first and second stringers are attachable to each other by inserting the second stringer in the first and second channels and then meshing together the first and second teeth using one of the first and second sliders while starting at either one of the first tape first and second ends;

the body further comprising a second slide fastener similar to the first slide fastener between the body second and third panels and extending between the body first and second ends to allow selective attachment of the body second and third panels to each other and detachment of the body second and third panels from each other.

2. The garment extender as defined in claim 1, wherein, with the first and second stringers attached to each other and the first and second sliders respectively at the first tape first and second ends, the first and second stringers are detachable from each other by moving both the first and second sliders adjacent either one of the first tape first and second ends and then removing the second stringer from the first and second channels.

3. The garment extender as defined in claim 2, wherein, with the first and second stringers positioned adjacent each other, the first and second stringers are alternatively securable to each other in a first direction by moving the first and second sliders to the first tape first end, inserting the second stringer first in the second channel and then in the first channel, and subsequently moving the second slider towards the first tape second end; and securable to each other in a second direction by moving the first and second sliders to the first tape second end, inserting the second stringer first in the first channel and then in the second channel, and subsequently moving the first slider towards the first tape first end.

4. The garment extender as defined in claim 1, wherein the first tape is provided with a retainer pin at each end thereof preventing the first and second sliders from sliding out of the first stringer; and

wherein the second tape is provided with a separable pin at each of the tape first and second ends, the separable pins being each insertable through both the first and second channels when the first and second sliders abut against each other to attach the first and second stringers to each other and removable from both the first and second channels when the first and second sliders abut against each other to detach the first and second stringers from each other.

12

5. The garment extender as defined in claim 1, wherein the body tapers in a direction leading from the body first end towards the body second end.

6. The garment extender as defined in claim 1, wherein the first stringers of the first and second slide fasteners are both mounted to the body second panel on opposite sides thereof and wherein the second stringers of the first and second slide fasteners are mounted respectively to the body first and third panels.

7. The garment extender as defined in claim 1, wherein the second stringers of the first and second slide fasteners are both mounted to the body second panel on opposite sides thereof and wherein the first stringers of the first and second slide fasteners are mounted respectively to the body first and third panels.

8. The garment extender as defined in claim 1, wherein the first stringers of the first and second slide fasteners are mounted respectively to the body second and third panels, and wherein the second stringers of the first and second slide fasteners are mounted respectively to the body first and second panels.

9. The garment extender as defined in claim 8, wherein the second panel defines opposed second panel first and second faces, the second panel first and second faces being made of different materials.

10. The garment extender as defined in claim 9, wherein the second panel first and second faces are respectively waterproof and made of a soft to touch material.

11. The garment extender as defined in claim 7, wherein the second panel defines opposed second panel first and second faces, the second panel first and second faces being made of different materials.

12. The garment extender as defined in claim 11, wherein the second panel first and second faces are respectively waterproof and made of a soft to touch material.

13. The slide fastener as defined in claim 4, wherein the retainer pin includes a pin body of substantially constant thickness therealong and a retainer protruding from the pin body to produce a thicker portion thicker than the remainder of the retainer pin.

14. The slide fastener as defined in claim 4, wherein the retainer and separable pins have substantially identical pin lengths.

15. The slide fastener as defined in claim 14, wherein the pin lengths are substantially equal to a combined length of the first and second channels.

16. A garment extender comprising:

a body, the body defining opposed body first and second ends and body first and second sides extending therebetween, the body first and second sides being provided each with a respective attachment for attaching the garment extender to a garment;

the body including body first and second panels and a slide fastener between the body first and second panels between the body first and second ends to allow selective attachment of the body first and second panels to each other and detachment of the body first and second panels from each other;

the slide fastener including:

a first stringer, the first stringer including a first tape secured to the body first panel and defining first tape first and second ends respectively at the body first and second ends, a plurality of first teeth being provided along the first tape between the first tape first and second ends;

a second stringer, the second stringer including a second tape secured to the body second panel and

13

defining second tape first and second ends respectively at the body first and second ends, a plurality of second teeth being provided along the second tape between the second tape first and second ends;
 first and second sliders, the first slider defining a first 5
 channel defining first channel wide and narrow ends, the second slider defining a second channel defining second channel wide and narrow ends, the first slider being operative for meshing to each other the first and second teeth when the first and second teeth 10
 move together relative to the first channel from the first channel wide end to the first channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the first channel from the first channel narrow end to the first channel wide end, the 15
 second slider being operative for meshing to each other the first and second teeth when the first and second teeth move together relative to the second

14

channel from the second channel wide end to the second channel narrow end and for separating from each other the first and second teeth when the first and second teeth move together relative to the second channel from the second channel narrow end to the second channel wide end;
 the first and second sliders being mounted to the first stringer with the first and second channel narrow ends facing each other, the first and second channel wide ends facing respectively the first tape first and second ends;
 wherein, with the first and second stringers detached from each other, the first and second stringers are attachable to each other by inserting the second stringer in the first and second channels and then meshing together the first and second teeth using one of the first and second sliders while starting at either one of the first tape first and second ends.

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